UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

August 9, 2019

Mr. Ken Peters
Senior Vice President and Chief Nuclear Officer
VISTRA Operations Company, LLC
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000445/2019002 AND 05000446/2019002

Dear Mr. Peters:

On June 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Comanche Peak Nuclear Power Plant, Units 1 and 2. On July 2, 2019, the NRC inspectors discussed the results of this inspection with Mr. Tom McCool and other members of your staff. A telephonic re-exit was conducted on July 31, 2019, with Mr. Tom McCool and other members of your staff to discuss a change in characterization on one finding. The results of this inspection are documented in the enclosed report.

Three findings of very low safety significance (Green) are documented in this report. Each of these findings involved violations of NRC requirements. Additionally, one Severity Level IV violation without an associated finding is documented in this report. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement; and the NRC Resident Inspector at Comanche Peak.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC Resident Inspector at Comanche Peak.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at http://www.nrc.gov/reading-rm/adams.html and at the NRC Public Document Room in accordance with 10 CFR 2.390, “Public Inspections, Exemptions, Requests for Withholding.”

Sincerely,

/RA by CYoung for/

Neil F. O'Keefe Chief
Reactor Projects Branch B

Docket Nos. 05000445 and 05000446
License Nos. NPF-87 and NPF-89

Enclosure:
As stated

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COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000445/2019002 AND 05000446/2019002 – DATED AUGUST 9, 2019

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DOCUMENT NAME: CP2019002-RP-JEJ
ADAMS ACCESSION NUMBER: ML19221B727

X SUNSI Review By:BKT	ADAMS: X Yes ☐ No	☐ Non-Publicly Available X Publicly Available	X Non-Sensitive ☐ Sensitive	Keyword: NRC-002

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000445 and 05000446
License Numbers:	NPF-87 and NPF-89
Report Numbers:	05000445/2019002 and 05000446/2019002
Enterprise Identifier:	I-2019-002-0011
Licensee:	VISTRA Operations Company, LLC
Facility:	Comanche Peak Nuclear Power Plant, Units 1 and 2
Location:	Glen Rose, TX 76043
Inspection Dates:	March 17, 2019 to June 30, 2019
Inspectors:	R. Alexander, Senior Project Engineer I. Anchondo-Lopez, Reactor Inspector A. Athar, Resident Inspector B. Baca, Health Physicist L. Carson, Senior Health Physicist N. Hernandez, Operations Engineer J. Josey, Branch Chief R. Kumana, Senior Resident Inspector B. Larson, Senior Operations Engineer
Approved By:	Neil F. O'Keefe, Chief Reactor Projects Branch B Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a integrated inspection at Comanche Peak Nuclear Power Plant, Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to https://www.nrc.gov/reactors/operating/oversight.html for more information.

List of Findings and Violations

Failure to Report a Change in Medical Condition of a Licensed Operator			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Not Applicable	NCV 05000446,05000445/2019002-01 Open	Not Applicable	71111.11B
The NRC identified a Severity Level IV non-cited violation (NCV) of 10 CFR 55.25, "Incapacitation Because of Disability or Illness," for the licensee's failure to notify the NRC within 30 days of a change in a licensed operator's medical condition.			

Failure to Evaluate a Change to the Facilities AC Power System			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000446/2019002-02 Open/Closed	None (NPP)	71111.15
The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to assure that a design change met regulatory requirements for sharing of systems among units. Specifically, the licensee performed a change to the facility to allow the inclusion of Unit 1 specific safety-related loads on common panels XEC 2-1 and XEC 1-1 but failed to verify that there would be no adverse effect on the performance of safety functions if these unitized loads were powered from Unit 2.			

Inadequate Operability Evaluation of Control Room Air Conditioning Unit X-01			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000446/2019002-03 Open/Closed	[H.11] - Challenge the Unknown	71152
The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow the requirements of Station Procedure STI-422.01, "Operability Determination and Functionality Assessment Program." Specifically, on December 15, 2018, control room air conditioning (CRAC) Unit X-01 tripped due to a low lube oil condition caused by freon absorption in the oil. Operations personnel subsequently declared CRAC X-01 operable and placed it back in service without understanding the cause of the trip or establishing a reasonable expectation for operability of the unit.			

Failure to Provide Adequate Procedure Results in a Reactor Trip			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000446/2019002-04 Open/Closed	[H.12] - Avoid Complacency	71153
The inspectors reviewed a Green, self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” associated with the licensee’s failure to establish adequate procedural guidance for operators checking for buzzing relays. This resulted in a feedwater isolation to steam generator 2-04 and operators inserting a manual reactor trip. The licensee entered this issue into the corrective action program as Condition Report CR-2019-001949.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000446,05000445/2019-001-00	LER 2019-001-00 for Comanche Peak Nuclear Power Plant (CPNPP), Units 1 and 2, LTOP Power Operated Relief Valve (PORV) Setpoint.	71153	Closed
LER	05000446/2019-001-00	LER 2019-001-00 For Comanche Peak Nuclear Power Plant (CPNPP) Unit 2, Manual Reactor Trip Due to Feedwater Isolation Valve Closure.	71153	Closed

PLANT STATUS

Unit 1 began this inspection period in coast down at 91 percent rated thermal power. The unit coasted down until April 20, 2019, when the unit was shut down to commence a refueling outage. On May 26, 2019, the unit began a reactor startup and reached rated thermal power on May 31, 2019. The unit remained at or near rated thermal power for the remainder of the inspection period.

Unit 2 operated at or near rated thermal power for the entire inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.04) (1 Sample)

(1) The inspectors evaluated readiness to cope with external flooding associated with Squaw Creek Reservoir level reaching 776.5 feet.

Impending Severe Weather Sample (IP Section 03.03) (1 Sample)

(1) The inspectors evaluated readiness for impending adverse weather conditions for severe thunderstorms on March 17, 2019.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

(1) Unit 2, train B station service water (protected under defense-in-depth strategy-03) on May 1, 2019

(2) Unit 1, centrifugal charging pump 1-02 while pump 1-01 was out of service on June 11, 2019

(3) Unit 2, motor drive auxiliary feedwater pump 2-02 while pump 2-01 was out of service on June 13, 2019

(4) Unit 2, reactor coolant system leakage detection instrumentation on June 24, 2019

71111.04S - Equipment Alignment

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated system configurations during a complete walkdown of the service water intake and ultimate heat sink system on June 24, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

(1) fire zones 2SA1B and 2SA2A, Unit 2, safeguards building 773' elevation on May 28, 2019

(2) fire zone AA21a, auxiliary building elevation 790' CCW HX room and hallway area outside of room on May 14, 2019

(3) fire zone AA21b, auxiliary building elevation 810' hallways on June 21, 2019

(4) fire zone SB2c, auxiliary building elevation 773 on June 25, 2019

(5) fire zone SB4, auxiliary building 773 elevation on June 26, 2019

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

(1) Unit 1, diesel generator 1-01 jacket water heat exchanger

71111.08P - Inservice Inspection Activities (PWR)

PWR Inservice Inspection Activities Sample (IP Section 03.01) (1 Sample)

(1) The inspectors verified that the reactor coolant system boundary, steam generator tubes, reactor vessel internals, risk-significant piping system boundaries, and containment boundary are appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined and accepted by reviewing the following activities from April 29 to May 3, 2019:

03.01.a - Nondestructive Examination and Welding Activities.

The inspectors directly observed or reviewed records of the following Nondestructive activities:

1. Ultrasonic Examination
    a. Weld TBX-2-2501-29, Report Number 1RF20-UT-018, Elbow-to-Pipe in Residual Heat Removal System
    b. Weld TBX-2-2501-34, Report Number 1RF20-UT-028, Tee-to-Pipe in Residual Heat Removal System
    c. Weld TBX-1-1100-3, Report Number RV-ISI 2019, Reactor Vessel Intermediate to Lower Shell weld
    d. Weld TBX-1-1100-4, Report Number RV-ISI 2019, Reactor Vessel Lower Shell to Bottom Head weld
    e. Weld TBX-1-1100-7, Report Number RV-ISI 2019, Reactor Vessel Upper Shell Longitudinal Weld
    f. Weld TBX-1-4100-1, 2, Report Number SE-338-01 , Hot Leg One Reactor Vessel Nozzle to Safe End and Safe End to Pipe
    g. Weld TBX-1-4100-14, 13, Report Number SE-293-01 , Cold Leg One Reactor Vessel Nozzle to Safe End and Safe End to Pipe
    h. Weld TBX-1-4200-14, 13, Report Number SE-247-01 , Cold Leg Two Reactor Vessel Nozzle to Safe End and Safe End to Pipe
    i. Weld TBX-1-4300-1, 2, Report Number SE-158-01 , Hot Leg Three Reactor Vessel Nozzle to Safe End and Safe End to Pipe
    j. Weld TBX-1-4200-1, 2, Report Number SE-202-01 , Hot Leg Two Reactor Vessel Nozzle to Safe End and Safe End to Pipe
    k. Weld TBX-1-4300-14, 13, Report Number SE-113-01 , Cold Leg Three Reactor Vessel Nozzle to Safe End and Safe End to Pipe
    l. Weld TBX-1-4400-14, 13, Report Number SE-67-01 , Cold Leg Four Reactor Vessel Nozzle to Safe End and Safe End to Pipe
    m. Weld TBX-1-4400-1, 2, Report Number SE-158-01 , Hot Leg Four Reactor Vessel Nozzle to Safe End and Safe End to Pipe

2. Magnetic Particle Examination
    a. Weld TBX-2-2301-H4, Report Number 1RF20-MT-002, Pipe Welded Attachment in Feedwater System

3. Liquid Penetrant Examination
    a. Weld TBX-2-2568-H28, Report Number 1RF20-PT002, Pipe Welded Attachment in Safety Injection System

4. Visual Examination
    a. Weld TBX-2-2568-H28, Report Number 1RF20-VT-055, Pipe Dual Struts in Safety Injection System

03.01.b - Pressurized-Water Reactor Vessel Upper Head Penetration Examination Activities were not required this outage.

03.01.c – Pressurized-Water Reactor Boric Acid Corrosion Control Activities.

The inspector reviewed five boric acid corrosion evaluations and associated corrective actions contained in condition report 2019-03234.

03.01.d - Pressurized-Water Reactor Steam Generator Tube Examination Activities were not required this outage.

Identification and Resolution of Problems:

The inspector reviewed 16 notifications that dealt with inservice inspections issues and found that items were entered into the corrective action program at the appropriate level and addressed correctly.

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

(1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered on May 29, 2019.

Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee's annual requalification operating test.

Administration of an Annual Requalification Operating Test

The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives.

Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee, and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

Problem Identification and Resolution

The inspectors evaluated the licensee's ability to identify and resolve problems associated with licensed operator performance.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (2 Samples)

(1) The inspectors observed and evaluated licensed operator performance in the control room during Unit 1 shutdown on April 20, 2019.

(2) The inspectors observed and evaluated licensed operator performance in the control room during Unit 1 startup on May 26, 2019.

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

(1) The inspectors observed and evaluated a simulator-based loss of coolant accident scenario on June 24, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (1 Sample)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

(1) Radiation monitors on June 27, 2019.

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

(1) Unit 1, risk mitigating actions associated with insulation removal on the residual heat removal system on March 18, 2019

(2) Unit 1, risk mitigating actions associated with Train B EDG system outage window on April 22, 2019

(3) Risk mitigating actions associated with spent fuel pool cooling (after Unit 1 fuel offload) on May 1, 2019

(4) Unit 1, diesel generator 1-02 cylinder liner and piston emergent replacement on May 15, 2019

(5) Unit 1, high energy line break damper testing on May 23, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Units 1 and 2, CRAC X-01 trip on low load on April 8, 2019

(2) Unit 1, operability of safety systems with power supply panel XEC 2-1 aligned to Unit 2 on May 9, 2019

(3) Unit 2 motor drive auxiliary feedwater pump exceeded alert range for vibrations on May 10, 2019

(4) Units 1 and 2, potential tornadic missiles due to storage locations on May 28, 2019

(5) Unit 1, train B EDG exhaust relief valve doghouse insulation worn through on May 30, 2019

(6) Control room air conditioning calculation did not evaluate heat load from panel CPX-ECPRCV-13 on June 13, 2019

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (3 Samples)

The inspectors evaluated the following temporary or permanent modifications:

(1) common service water tunnel sump modification on April 15, 2019
(2) mechanical stress introduction project on May 22, 2019
(3) power operated relief valve setpoint changes on May 24, 2019

71111.19 - Post-Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (7 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Unit 1, low temperature over pressure protection setpoint change on April 15, 2019

(2) Unit 1, diesel generator 1-02 following cylinder liner and piston emergent replacement on April 29, 2019

(3) Unit 1, replace oil return trap on control room air conditioning unit X-01, work order 5615078 on May 5, 2019

(4) Unit 1, work order 5505638, replace regulator on valve 1-8825 on May 6, 2019

(5) Unit 1, work order 5754670, replace solid state protection switch S809 on May 9, 2019

(6) Unit 1, diesel generator 1-01 following turbocharger replacement on May 13, 2019

(7) Unit 1, work order 5515877, component cooling water supply valve 1-HV-4515-MO on May 24, 2019

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated 1RF20 activities from March 19 to May 26, 2019.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

(1) Unit 1, safety injection check valves 1-8956A and 1-8956B on May 23, 2019

Inservice Testing (IP Section 03.01) (1 Sample)

(1) Unit 1, OPT-503A stroke time test of valve 1-HV-4168 on May 12, 2019

Surveillance Tests (other) (IP Section 03.01) (4 Samples)

(1) Unit 1, OPT-417A turbine driven auxiliary feedwater pump control panel load shed test on March 20, 2019

(2) power operated relief valve testing following setpoint changes on April 10, 2019

(3) Unit 2, train A RHR surveillance, OPT-203B on May 15, 2019

(4) Unit 2, train A integrated test surveillance on May 16, 2019

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated an emergency preparedness drill on June 26, 2019

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Contamination and Radioactive Material Control (IP Section 02.03) (1 Sample)

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material.

(1) The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material. The inspectors verified the following sealed sources are accounted for and are intact:

Well Source, 2,178 Curies of Cs-137

HP-60193-XSS, 3.3. Curies Am-241(Be)

HP-60265-XSS, 2.0 Curies Pu-238

HP-60250-XSS, 1.06 Curies Cs 137

High Radiation Area and Very High Radiation Area Controls (IP Section 02.05) (1 Sample)

(1) The inspectors evaluated risk-significant high radiation area and very high radiation area controls.

Instructions to Workers (IP Section 02.02) (1 Sample)

The inspectors evaluated instructions to workers including radiation work permits used to access high radiation areas.

(1) The inspectors evaluated instructions to workers including radiation work permits used to access high radiation areas:

Radiation work packages

Mechanical Stress Improvement Process (MSIP): RWPs 2019-2604, 2605, 2606, & 2607

Cavity Decontamination: RWP 2019-1607

Westinghouse Refueling & Support: RWPs 2019-1600 & 1601

Scaffolding Support: RWPs 2019-1215 & 1606

Electronic alarming dosimeter alarms

There were no alarms that occurred during the period of this inspection.

Labeling of containers

Cavity Decontamination, 55-gallon drum loaded with contaminated mop heads and radwaste: 5/1/19

Rad Vault Container – 16 loaded with spent radwaste filters; 5/1/19

Unit-1 Volume Control Tank Room stored with seven 55-gallon drums of radwaste: 5/3/19

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 02.06) (1 Sample)

(1) The inspectors evaluated radiation worker performance and radiation protection technician proficiency.

Radiological Hazard Assessment (IP Section 02.01) (1 Sample)

The inspectors evaluated radiological hazards assessments and controls.

(1) The inspectors evaluated radiological hazards assessments and controls. The inspectors reviewed the following:

Radiological surveys

M-20190501-40: Unit-1 Reactor Bldg. 854' Pressurizer Compartment 5/01/19

M-20190501-63: Unit-1 Reactor Bldg. 877' Pressurizer Compartment 5/01/19

M-20190421-9: AMS-4 Unit-1 Reactor Bldg. Containment 905' 4/21/19

M-20190421-35: Reactor Bldg. 808' Trash rack 4/21/19

Risk significant radiological work activities

MSIP Project: RWPs 2019-2604, 2605, 2606, & 2607

Cavity Decontamination: RWP 2019-1607

Westinghouse Refueling & Support: RWPs 2019-1600 & 1601

Scaffolding Support: RWPs 2019-1215 & 2607

Air sample survey records

M-20190430-20: AMS-4 Unit-1 Containment Hatch 4/30/19

M-20190430-21: AMS-4 Unit-1 Containment Equipment Hatch 4/30/19

M-20190428-1: AMS-4 Unit-1 Containment 905' 4/27/19

Radiological Hazards Control and Work Coverage (IP Section 02.04) (1 Sample)

The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities.

(1) The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities.

Radiological work package for areas with airborne radioactivity

RWP 2019-1607 M-20190430-21: AMS-4 Unit-1 Containment Equipment Hatch 4/30/19

Cavity Decontamination: M-20190428-1: AMS-4 Unit-1 Containment 905' 4/27/19

Steam Generator-1 Area HEPA Filter: 5/1/19

Unit-1 RHR-B Pump Room: M-201801225-10 12/25/18

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Engineering Controls (IP Section 02.01) (1 Sample)

The inspectors evaluated airborne controls and radioactive monitoring.

(1) Installed ventilation systems

CPNPP Control Room Ventilation System

Unit-1 Containment Ventilation System

Unit-1 Primary Plant Ventilation Exhaust Filter X-16

Unit-1 Primary Plant Ventilation Exhaust Filter X-02

Temporary ventilation system setups

Unit-1 Steam Generator Reactor Bldg. 860' HEPA Filter 4/27/19 to 5/2/19

Unit-1 Refueling Floor 860' HEPA Filter 4/27/19 to 5/2/19

Portable or installed monitoring systems

M-20190430-20: AMS-4 Unit-1 Containment Hatch 4/30/19

M-20190430-21: AMS-4 Unit-1 Containment Equipment Hatch 4/30/19

M-20190428-1: AMS-4 Unit-1 Containment 905' 4/27/19

Self-Contained Breathing Apparatus for Emergency Use (IP Section 02.03) (1 Sample)

The inspectors evaluated self-contained breathing apparatus program implementation.

(1) Status and surveillance records for SCBAs

Inspected 3 SCBAs located in the CPNPP Control Room 5/2/19
W.O. 5345020 Surveillance: 10 Units 1 & 2 Primary Assembly SCBAs, 7/10/17
W.O. 5345020 Surveillance: 9 Control Room SCBAs, 7/20/17

SCBA fit for on-shift operators

3 Unit-1 Operation/Control Room Staff:

- Reactor Operator Qualification
- Operator Crew Qualification
- Operations Crew Supervisor

SCBA maintenance check

Inspected 3 SCBAs located in the CPNPP Control Room 5/2/19
W.O. 5345020 Surveillance: 10 Units 1 & 2 Primary Assembly SCBAs, 7/10/17
W.O. 5345020 Surveillance: 9 Control Room SCBAs, 7/20/17

Use of Respiratory Protection Devices (IP Section 02.02) (1 Sample)

The inspectors evaluated the licensee's use of respiratory protection devices by:

(1) Evaluations for the use of respiratory protection
   b. RWP 2019-1607: 16 Radiation Protection Technicians (Contractor & CPNPP Staff)

Respiratory protection use during work activities
   b. RWP 2019-1607: 16 Radiation Protection Technicians (Contractor & CPNPP Staff)

Medical fitness for use of respiratory protection devices
   b. Nine Senior Radiation Protection Technicians, ERO Qualified through February 2020
   c. Sixteen Radiation Protection Technicians (Contractor & CPNPP Staff)

Observation of donning, doffing and functional test

- Four Westinghouse Refuel Contractors
- Two CPNPP Decontamination Staff
- Three Unit-1 Operation/Control Room Staff

Respiratory protection device evaluation

- Six Gen Tex Pure Flows units

- Six 3M Versa Flows
- Eight Full Face Respirators and associated filter cartridges
- Four Self-Contained Breathing Apparatus (SCBA)

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (2 Samples)

(1) Unit 1 from April 1, 2018 through March 31, 2019
(2) Unit 2 from April 1, 2018 through March 31, 2019

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

(1) Unit 1 from April 1, 2018 through March 31, 2019
(2) Unit 2 from April 1, 2018 through March 31, 2019

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (2 Samples)

(1) Unit 1 from April 1, 2018 through March 31, 2019
(2) Unit 2 from April 1, 2018 through March 31, 2019

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

(1) September 30, 2018 – April 30, 2019

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample. (IP Section 02.16) (1 Sample)

(1) September 30, 2018 – April 30, 2019

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

(1) Unit 2 safety bus undervoltage due to loss of 25 kV loop
(2) Appendix R emergency lighting

Semiannual Trend Review (IP Section 02.02) (1 Sample)

(1) The inspectors reviewed the licensee's corrective action program for trends that might be indicative of a more significant safety issue. The inspectors' review was focused on operability evaluations performed by operations department personnel during the period of December 1, 2018 to June 30, 2019.

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (2 Samples)

The inspectors evaluated the following licensee event reports (LERs):

(1) Licensee Event Report 05000446/2019-01, "Manual Reactor Trip Due To Feedwater Isolation Valve Closure," on June 17, 2019 (ADAMS Accession No. ML19127A143). The circumstances surrounding this LER are documented in report Section Inspection Results.

(2) Licensee Event Report 05000445/2019-01, "LTOP Power Operated Relief Valve (PORV) Setpoint," on June 28, 2019 (ADAMS Accession No. ML19127A079). The circumstances surrounding this LER are documented in report Section Inspection Results.

INSPECTION RESULTS

Observation: Semi-Annual Trend Review	71152

The inspectors' review focused on inadequate operability and functionality evaluations and considered the results of daily inspector corrective action program item screenings during the period of December 1, 2018 to June 30, 2019.

The inspectors reviewed operability evaluations documented in station condition reports. During their review the inspectors identified a declining trend associated with operator knowledge when performing operability and functionality evaluations. Specifically, the inspectors identified eight examples, including one non-cited violation, of inadequate operability determinations. Examples are:

- TR-2018-5446 identified an issue with a temperature controller for the operations support center, emergency plan equipment. Operations personnel failed to evaluate functionality of the equipment despite procedure STI-433.01, "Maintaining Equipment Important to Emergency Response," stating that issues with this equipment required functionality assessments. This issue could have affected habitability of the operations support center.

- CR-2018-008521 identified that control room air conditioning unit X-01 tripped following a valid surveillance test start demand due to a low lube oil condition caused by freon absorption in the oil. Operations personnel subsequently declared CRAC X-01 operable and placed it back in service without understanding the cause of the trip or establishing a reasonable expectation for operability of the unit. This could affect the ability of the machine to perform its safety function of being able to start and run when needed and had caused an actual failure during the surveillance test.

- CR-2019-000324 identified a component on steam generator atmospheric relief valves as not meeting environmental qualification requirements. Operations personnel incorrectly determined that the atmospheric relief valves were not required to be environmentally qualified despite the FSAR stating they were required to

function in a harsh environment. This could have resulted in equipment not being able to function during an event.

- CR-2019-001628 identified that an atmospheric relief valve was experiencing leakage. Operations personnel incorrectly determined that the leakage did not affect the reactor despite the FSAR stating that during accident scenarios the atmospheric relief valves are assumed to be closed. This appeared to place the plant outside accident analyses and therefore could have affected the licensee's ability to mitigate an accident.

- CR-2019-001830 and CR-2019-001836 identified both surface and pitting corrosion on service water piping. Operations personnel evaluated the surface corrosion in the documented operability evaluation but failed to evaluate the pitting corrosion. This could have affected the structural integrity of the piping system which could have affected the system's ability to respond to an event.

- CR-2019-003498 noted boric acid on a safety related snubber. Operations personnel failed to evaluate the ability of the component to function in the identified condition.

- CR-2019-003672 identified that the fire protection system had experienced a water hammer event. Operations personnel failed to evaluate the functionality of the piping for this type of event.

Upon identification of these issues by the inspectors the licensee appropriately entered these issues into the station's corrective action program.

While the inspectors determined that most of these issues were minor in nature, inspectors determined that they were the result of operator knowledge gaps with respect to the facility's licensing basis documented in the FSAR, which is a primary part of the process for assessing operability and functionality. The inspectors determined that these issues were indicative of a declining trend associated with operator knowledge when performing operability evaluations.

Failure to Report a Change in Medical Condition of a Licensed Operator			
Cornerstone	Severity	Cross-Cutting Aspect	Report Section
Not Applicable	Severity Level IV NCV 05000446,05000445/2019002-01 Open	Not Applicable	71111.11B

The NRC identified a Severity Level IV non-cited violation (NCV) of 10 CFR 55.25, "Incapacitation Because of Disability or Illness," for the licensee's failure to notify the NRC within 30 days of a change in a licensed operator's medical condition.

Description:

On August 8, 2018, during a biennial license physical examination for a senior reactor operator, the designated medical examiner (DME) determined that the individual required a prescription for corrective lenses; therefore, a condition was required to be added to the individual's license. The DME further determined that a "no solo" condition was also required for a worsening health condition. At that time, the individual was undergoing evaluation and treatment by his primary care physician. The facility licensee failed to notify the NRC within 30 days of learning of the disability or illness. The inspectors identified this failure to inform

the NRC on March 19, 2019, during a sampling review of medical records for individual license holders.

The inspectors verified, through interviews, that the individual had been wearing the prescription lenses as prescribed, and that at no time was the individual in solo operation of the controls, as verified by station log reviews and interviews with various station personnel. The inspectors also noted that the individual had committed no errors while on shift or been involved in any operational mishaps or near misses.

Corrective Actions: On March 28, 2019, Comanche Peak Nuclear Power Plant submitted a letter to the NRC with a revised NRC Form 396, "Certification of Medical Examination by Facility Licensee," that reflected two new license conditions: one for wearing the prescription lenses and one prohibiting solo operation of the controls. The prescription lens and no solo conditions were required for fitness-for-duty reasons in accordance with the American National Standards Institute (ANSI)-3.4-1983, "Medical Certification And Monitoring Of Personnel Requiring Operator Licenses For Nuclear Power Plants,"

Corrective Action References: Condition Report CR-2019-002428

Performance Assessment: The inspectors determined this violation was associated with a minor performance deficiency.

The performance deficiency is minor because a licensing decision was not made due to the absence of this medical information, and the individual did follow the required restrictions for the diagnosed medical conditions.

Enforcement: The ROP's significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance.

Severity: The inspectors determined the violation to be a Severity Level IV violation similar to Example 6.4.d.1.a in the NRC Enforcement Policy. Specifically, the licensee non-willfully failed to inform the NRC of a change in an operator's medical condition, which did not contribute to the NRC making an incorrect regulatory decision. In addition, the individual adhered to the ANSI 3.4 requirements for the changes in his medical condition.

Violation: Title 10 CFR 55.25 requires, in part, that if a licensed senior operator develops a permanent physical condition that causes the licensee to fail to meet the requirements of 10 CFR 55.21, the facility shall notify the Commission within 30 days of learning of the diagnosis. For conditions where a license condition is required, the facility licensee must provide medical certification on NRC Form 396, "Certification of Medical Examination by Facility Licensee." Contrary to the above from August 8, 2018 to March 28, 2019, the licensee failed to notify the Commission, within 30 days of learning the diagnosis, of a change in medical condition of a licensed senior operator that developed a permanent physical condition that caused the licensed senior operator to fail to meet the requirements of 10 CFR 55.21. Specifically, on August 8, 2018, during a biennial license physical for the senior reactor operator, the DME determined that the individual required conditions on his license for prescription corrective lenses and a "no solo" condition, but the NRC did not receive the revised NRC Form 396 until March 28, 2019.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Evaluate a Change to the Facilities AC Power System			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000446/2019002-02 Open/Closed	None (NPP)	71111.15

The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to assure that a design change met regulatory requirements for sharing of systems among units. Specifically, the licensee performed a change to the facility to allow the inclusion of Unit 1 specific safety-related loads on common panels XEC 2-1 and XEC 1-1 but failed to verify that there would be no adverse effect on the performance of safety functions if these unitized loads were powered from Unit 2.

Description:

While performing status walkdowns on April 1, 2019, the inspectors noted that the licensee had shifted power supplied to AC buses XEC 2-1 and XEC 1-1 from Unit 1 power to Unit 2 power. Because of previous issues identified with common power buses (NCV 05000445/2019001-02, "Failure to Evaluate a Change to the Facility DC Power System") the inspectors asked the licensee if there were any Unit 1 specific loads supplied by these panels, and whether these loads were operable while powered from Unit 2.

The licensee informed the inspectors that there were Unit 1 loads on buses XEC 2-1 and XEC 1-1 and that since the swap had been done in accordance with an approved procedure, SOP-607A, "118 VAC Distribution System and Inverters," and the busses were being power by a safety-related 1E power supply from the other unit, all loads were operable.

Inspectors were concerned that this configuration did not appear consistent with the facility design requirements and current licensing bases. Of note, 10 CFR 50, Appendix A, General Design Criterion 5, "Sharing of structures, systems, and components," states that *s*tructures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units.

Inspectors reviewed NUREG-0797, Safety Evaluation Report related to the operation of Comanche Peak Steam Electric Station, Units 1 and 2 Docket Nos. 50-445 and 50-446, Supplement 22 and the facilities FSAR and identified the following with regard to sharing safety systems:

- The site was licensed with a commitment to Regulatory Guide (RG) 1.81, "Shared Emergency and Shutdown Electric Systems for Multi-Unit Nuclear Power Plants," without exceptions.

- RG 1.81 contains three regulatory Positions.
  - C.1 required that DC systems in multi-unit nuclear power plants should not be shared.

- C.2 covered plants which were under construction before June 1,1973 and stated that these plants would be reviewed by the NRC on an individual case basis. This position gave seven criteria that should be satisfied by the applicant.
- C.3 stated that for multi-unit plants for which a construction permit was issued on or after June 1, 1973, should have separate and independent onsite emergency and shutdown electric systems.

- The facility submitted their construction permit application for Unit 1 after June 1, 1973.

- NUREG-0797, Section 8.3, states that there is no sharing of emergency power sources between units, which is in accordance with RG 1.81.

- FSAR Section 8.3.1.1.9, "Sharing of Equipment between Two Units," states, in part, that nuclear-safety-related loads associated with each unit are powered exclusively from Class 1E systems of that particular unit and nuclear-safety-related loads common to both units are powered from Class 1E MCCs and distribution panels which have supplies from each unit. The inspectors noted that this was no longer true because there were unit-specific loads on shared panels XEC1-1 and XEC 2-1.

Furthermore, the inspectors noted that in January 2000, the licensee had previously discovered that they had unit-specific safety-related loads from both Units 1 and 2 on common panels XEC 1-1 and XEC 2-1 in addition to the previously evaluated shared systems, contrary to what was described in their FSAR. The licensee entered this design control issue into the corrective action program as Condition Report CR-2000-000142. As corrective actions the licensee removed the Unit 2 loads from these common panels, changed the normal power supply of XEC 2-1 from Unit 2 to Unit 1, left the Unit 1 loads on both of these common panels, revised the description of their commitment to RG 1.81, and performed a 10 CFR 50.59 screening for this change.

The inspectors reviewed 50.59 screening document 59SC-2000-000142-02-02 and noted that as justification for this change the licensee stated, in part;

> …that the design is controlled such that loads of only Unit 1 are fed from a common panel and the normal source of power for the panel is Unit 1…the unit specific loads of only one unit are fed from a common panel and the common panel normal power source is the same unit, therefore, under normal operation, the interaction between the units for maintenance and test operation will be no different than what is required for a common panel. The time when such common panel is aligned to the units other than the one whose specific loads it feeds will be limited, any additional interaction needed for maintenance and test activities will be limited only.

Based on this justification, the licensee concluded that the requirements of RG 1.81, Regulatory Position C2 were met. Specifically, the sharing of the system is limited between two units only. A single failure at the system level, due to redundancy for common systems being maintained the same as for each unit, shall not preclude capability to automatically supply minimum ESF loads in any one unit and safely shutdown the other unit assuming a

loss of off-site power.

The inspectors determined that the licensee inappropriately applied Regulatory Position C.2. Specifically:

- RG 1.81 Regulatory Position C.2 was not applicable to Comanche Peak because their construction permit application was submitted after June 1, 1973. Also, this position included the statement that the NRC would review the proposed design for plants using this set of standards and did not contain an allowance for self-approval.

- Comanche Peak was originally evaluated for compliance against regulatory position C.3, and the licensee failed to properly change their commitment through the commitment change process.

- The licensee failed to document an analysis that demonstrated that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units.

The unit specific loads on the common panels could result in new failure modes for previously evaluated accidents. For example, non-1E buses 1EB1-2 and 1EB1-3 have shunt trip isolation devices that receive a signal from “a” contacts powered from XEC 1-1. The licensing basis credits these shunt trips as isolation devices between the non-1E and 1E buses. During a safety injection actuation on Unit 1 with XEC 1-1 being powered from Unit 2 a single failure (loss of power to this bus) would result in the shunt trip devices not actuating and leaving the non-1E buses aligned to the Unit 1 emergency diesel generators. This configuration could impact the emergency diesel generators capability to provide adequate power for safe shutdown. Based on this the inspectors determined that the inclusion of Unit 1 specific safety related loads on common panels XEC 1-1 and XEC 2-1 was a change to the facility as described in the FSAR. The inspectors also determined that the licensee had failed to ensure that this change was subject to design control measures commensurate with those applied to the original design. Specifically, the NRC had reviewed and approved the stations shared safety-related electrical bus schemes, and in this instance the site had authorized this change without any review to determine if there were adverse interactions.

The licensee entered this violation into their corrective action program. The licensee performed an analysis, EV-CR-2019-003684-2, to evaluate the effects on Unit 1 with cross powered safety loads. This analysis determined that there were potential detrimental effects associated with cross connecting Unit 1 safety loads to Unit 2 and recommended that these loads be powered from Unit 1 pending further review.

Corrective Actions: The licensee entered this violation into their corrective action program. The licensee performed an analysis, EV-CR-2019-003684-2, to evaluate the effects on Unit 1 with cross powered safety loads. This analysis determined that there were potential detrimental effects associated with cross connecting Unit 1 safety loads to Unit 2 and recommended that these loads be powered from Unit 1 pending further review.

Corrective Action References: CR-2019-003684

Performance Assessment:

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control attribute of the mitigating systems cornerstone and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage).

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power."

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR 50.59 requires, in part, that if the licensee makes changes to the facility as described in the FSAR without obtaining a license amendment, they must maintain a written evaluation which provides the basis for determining that the change does not require a licensee amendment. Contrary to the above, in April 2002, the licensee made a change to the facility as described in the FSAR without obtaining a license amendment but did not maintain a written evaluation which provides the basis for determining that the change does not require a licensee amendment.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Inadequate Operability Evaluation of Control Room Air Conditioning Unit X-01			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000446/2019002-03 Open/Closed	[H.11] - Challenge the Unknown	71152

The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow the requirements of station procedure STI-422.01, "Operability Determination and Functionality Assessment Program." Specifically, on December 15, 2018, control room air conditioning (CRAC) Unit X-01 tripped due to a low lube oil condition caused by freon absorption in the oil. Operations personnel subsequently declared CRAC X-01 operable and placed it back in service without understanding the cause of the trip or establishing a reasonable expectation for operability of the unit.

Description: On December 15, 2018, during the performance of integrated testing CRAC Unit X-01 tripped due to low lube oil pressure. Operators declared X-01 inoperable and initiated Condition Report (CR) 2018-008521 to capture this issue in the station's corrective action program. Operations also requested an evaluation from engineering for the identified condition.

Engineering documented an evaluation in EV-CR-2018-008521-1 later in the day on December 15, 2018. This evaluation concluded that CRAC X-01 had tripped due to refrigerant migration into the oil, and went on to state that the condition did not need to be corrected because under normal system loading the velocity of the refrigerant traveling

through the system and the piping arrangements returns the oil back to the compressors crankcase (removing the potential for the low pressure condition at the suction of the compressor). Operators then declared CRAC X-01 operable.

The inspectors subsequently reviewed CR-2018-008521 and the engineering evaluation documented in EV-CR-2018-008521-1. During their review inspectors questioned the adequacy of the engineering evaluation and the operability decision with respect to the cause of the trip being refrigerant migration. Specifically, the safety function of the CRAC units is to start and run when needed to maintain the control room environment during accidents, and refrigerant migration occurs when the unit is secured and is caused by differential pressure between the oil in the compressors crankcase and refrigerant. Inspectors noted that the CRACs are not continuously in operation and each unit typically runs one CRAC for two weeks with the other in standby for that period of time, and CRAC X-01 had been secured for approximately two weeks prior to integrated testing.

The inspectors reviewed Procedure STI-422.01, "Operability Determination and Functionality Assessment Program," and noted that the following definitions are provided for operability declaration in section 4.15, presumption of operability in section 4.17, and reasonable expectation of operability in Section 4.18. These definitions establish that: an operability declaration is a decision made by an SRO on the operating shift crew that there is reasonable expectation that an SSC can perform its specified safety function; the presumption of operability is based on the concept that technical specifications are organized and implemented on the presumption that systems are operable and without information to the contrary, it is reasonable to assume that once a system or component is established as operable, it will remain operable with surveillances providing that assurance; and a reasonable expectation of operability is the expectation that the evidence collected supports determining that a TS SSC is capable of performing its specified safety function.
Section 6.2.G states, in part, that operability determinations should include the effect or potential effect of the degraded or non-conforming condition on the affected SSC's ability to perform the specified safety functions, and whether there is a reasonable expectation of operability, including the basis for the determination.

The inspectors determined that the licensee had failed to evaluate the potential effect of refrigerant migration on CRAC X-01 with respect to its ability to perform its specified safety function and establish a reasonable expectation of operability. Specifically, the licensee evaluated the ability of the system to continue running with the condition present but failed to evaluate the ability to successfully start and reach a stable running condition, despite the fact that the evaluation was triggered by a failure to successfully start. The inspectors informed the licensee of their concerns and the licensee initiated CR-2019-005092 to capture this issue in the stations corrective action program.

Corrective Actions: The licensee performed an operability evaluation which established a reasonable expectation of operability and is evaluating corrective actions.

Corrective Action References: CR-2019-002092

Performance Assessment:

Performance Deficiency: The failure to evaluate the potential effect of refrigerant migration on CRAC X-01 with respect to its ability to perform its specified safety function and establish a reasonable expectation of operability was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and it adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee evaluated the issue enough to understand the physical mechanism that caused of the chiller trip but failed to evaluate the reason this mechanism was present to the degree that it could create a condition that resulted in an actual trip.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power."

Cross-Cutting Aspect: H.11 - Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, operators failed to stop and use all available information to ensure they fully understood the issue prior to declaring CRAC X-01 operable.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings. Procedure STI-422.01, "Operability Determination and Functionality Assessment Program," a procedure that is appropriate to the circumstances of evaluating the operability of safety-related components, Section 6.2.G requires, in part, that operability determinations should include the effect or potential effect of the degraded or non-conforming condition on the affected SSC's ability to perform the specified safety functions, and whether there is a reasonable expectation of operability, including the basis for the determination.

Contrary to the above, on December 15, 2019, an activity affecting quality was not accomplished in accordance with procedures appropriate to the circumstances. Specifically, operations personnel failed to follow the requirements of station procedure STI-422.01, "Operability Determination and Functionality Assessment Program," Section 6.2.G. Specifically, the licensee failed to evaluate the potential effect of refrigerant migration on CRAC X-01 with respect to its ability to start with refrigerant in the oil and establish a reasonable expectation of operability.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Provide Adequate Procedure Results in a Reactor Trip			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000446/2019002-04 Open/Closed	[H.12] - Avoid Complacency	71153
The inspectors reviewed a Green, self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the			

licensee's failure to establish adequate procedural guidance for operators checking for buzzing relays. This resulted in a feedwater isolation to steam generator 2-04 and operators inserting a manual reactor trip.

Description:

On March 3, 2019 an operator was checking for buzzing relays as required by the Shift Manager Daily Activities Log. During these checks the operator heard an audible buzzing sound and attempted to positively identify exactly which relay was buzzing by touching the suspected relay to check for vibration. When the operator made contact with the relay they also inadvertently made contact with the relay plunger which resulted in steam generator 2-04 feedwater isolation valve 2-HV-2137 shutting. When valve 2-HV-2137 shut this resulted in a loss of main feedwater to steam generator 2-04 which caused an alarm for divergent level and resulted in operators manually tripping the reactor. The licensee entered this issue in the stations corrective action program as CR-2019-001949.

The licensee performed an Organizational Effectiveness Investigation and determined that the cause of this event was that the Shift Manager Daily Activities Log did not provide adequate guidance to operators for how to safely perform buzzing relay checks. The lack of adequate guidance resulted in the operator using their own judgement based on their individual risk perception.

The inspectors reviewed the licensee evaluation and determined that the licensee's actions had determined the cause and the proposed corrective actions appeared to be adequate to address this issue.

Corrective Actions: The licensee's corrective actions for this issue were to remove buzzing relay checks from the operators' responsibilities and perform a risk review of all routine operations activities to ensure that adequate procedural guidance is provided.

Corrective Action References: CR-2019-001949

Performance Assessment:

Performance Deficiency: The failure to provide adequate procedural guidance on how to perform buzzing relay checks was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone. It adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations because the finding resulted in operators manually tripping the reactor. Specifically, the inadequate procedure resulted in an operator using their own judgement and inadvertently touching the relay plunger causing a feedwater isolation to steam generator 2-04.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power."

Cross-Cutting Aspect: H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. Specifically, the operator

used their own judgement to decide to touch a relay based on their individual risk perception without planning for mistakes or understanding the risk of the activity.
Enforcement: Violation: Title 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” states, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances. Contrary to the above, on March 3, 2019 the licensee failed to prescribe by documented instructions, procedures, or drawings appropriate to the circumstances that provided guidance for operators performing buzzing relay checks. This resulted in a feedwater isolation to steam generator 2-04 and operators inserting a manual reactor trip. Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On July 2, 2019, the inspectors presented the quarterly resident inspector inspection results to Mr. Tom McCool and other members of the licensee staff.

- On May 3, 2019, the inspectors presented the Occupational Safety Cornerstone Inspection IP 71124.01/03 and PI IP 71151 ORS/PRS Exit Meeting to Mr. T. McCool, Senior Vice President and other members of the licensee staff.

- On May 15, 2019, the inspectors presented the Inservice Inspection Exit Meeting to Dave Goodwin, Director Site Engineering and other members of the licensee staff.

- On June 3, 2019, the inspectors presented the Biennial Requalification Inspection to Gary Struble, Regulatory Affairs Specialist and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P	Corrective Action Documents	CR-YYYY-NNNN	2017-12392, 2017-11619, 2017-12371, 2017-12391, 2017-12859, 2018-00318, 2018-02385, 2018-03983, 2018-05224, 2018-08475, 2018-08535, 2019-03374, 2019-00542, 2019-03234, 2019-00211, 2019-05839.	
	Drawings	TBX-1-1100	Inservice Inspection Location Isometric	1
	Miscellaneous	CP-201900257	Unit 1 - Third Interval ASME Section XI Inservice Inspection Program Plan	2
	Procedures	MRS-SSP-3498	TBX RV Nozzle to Safe End Weld MSIP Field Service Procedure	0
		STA-737	Boric Acid Corrosion Detection and Evaluation	8
		STI-737.01	Boric Acid Corrosion Detection and Evaluation	0
		TX-ISI-11	Liquid Penetrant Examination for Comanche Peak Nuclear Power Plant	5
		TX-ISI-302	Ultrasonic Examination of Austenitic Piping Welds	5
		TX-ISI-70	Magnetic Particle Examination for Comanche Peak Nuclear Power Plant	14
		TX-ISI-8	VT-1 and VT-3 Visual Examination Procedure	11
		WDI-PJF-1321507-EPP-001	Examination Program Plan (Scan Plan)	1
71111.11B	Corrective Action Documents	CR-YYYY-NNNN	2017-03868, 2017-03964, 2017-04417, 2017-04499, 2017-04572, 2017-04683, 2017-06489, 2017-07890, 2017-08016, 2017-08672, 2017-09069, 2017-09904, 2017-09915, 2018-03312, 2018-03681, 2018-03745, 2018-03796, 2018-04038, 2018-05098, 2018-05130, 2018-05461, 2018-06369, 2018-07381, 2018-07384, 2018-08504, 2019-00555, 2019-01052, 2019-01240	
		TR-YYYY-NNNN	2017-03029, 2017-03066, 2017-03068, 2017-03083, 2017-03292, 2017-03770, 2017-05956, 2017-06540, 2017-08662, 2017-07003, 2017-07446, 2017-09096, 2017-12278, 2018-06584, 2018-06280, 2018-06291, 2018-06321, 2018-07045, 2019-01040	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous		LORT Cycle 18-5 Simulator Crews	
			2018 Licensed Operator Requalification Written Exam	Feb 22, 2019
			2018 Licensed Operator Requalification Operating Test	Jan 30, 2019
			2017-2018 Requalification Operating Test Sample Plan	Mar 11, 2019
			2017-2018 Requalification Written Exam Sample Plan	Mar 11, 2019
			RO Remedial Exam #1	Feb 28, 2018
			SRO Remedial Exam #1	Feb 28, 2018
			License Reactivation - 2017-2019	
			Simulator Differences List	Jan 28, 2019
		LL DM.CE	Lessons Learned from Design Modifications and Current Events Training	Sep 25, 2017
		MC-OPD1.F17.IR4	Cycle 17-6 Design Modifications and Current Events	Feb 20, 2018
		SOC-18-03	Simulator Oversight Committee Meeting Minutes	Mar 7, 2018
		SOC-18-06	Simulator Oversight Committee Meeting Minutes	Jun 28, 2018
		SOC-19-02	Simulator Oversight Committee Meeting Minutes	Feb 5, 2019
	Procedures	NTG-104	Nuclear Training Guideline 104 - Implementation	21
		ODA-102	Operations Department Administrative Manaual section 102 - Conduct of Operations	27
		ODA-407	Operations Department Administrative Manual section 407 - Procedures Use and Adherence	16
		OGPD-13	Operations Guideline 13 - Simulator Training Standards	Jun 27, 2017
		OGPD-3	Operations Guideline 3 - Operations Standards and Expectations	Jun 14, 2018
		OGPD-6	Operations Guideline 6 - Operations Department Performance Management, Monitoring, and Improvement	Jan 7, 2019
		SAPT-004	Simulator Annual Performance Test 004 - Core Performance Test	2
		SAPT-1	Simulator Annual Performance Test 1 - Steady State Test	2

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		SAPT-2	Simulator Annual Performance Test 2 - Transient Performance Test	2
		SAPT-3	Simulator Annual Performance Test 3 - Malfunction Test	2
		STA-105	Station Administrative Manual section 105 - Nuclear Training Department Administration	13
		STA-106	Station Procedure 106 - Nuclear Training Records	1
		STA-121	Station Procedure 121 - Licensed Operator Physicals and License Application Process	5
		STA-419	Station Procedure 419 - Management Oversight of Training Programs	15
		STA-501	Station Procedure 501 - Nonroutine Reporting	21
		STI-214.01	Station Instruction 214.01 - Control of Timed Operator Actions	1
		TRA-204	Training Procedure 204 - Licensed Operator Requalification Training	18
		TRA-206	Training Procedure 206 - Examination Control and Implementation	0
		TRA-207	Training Procedure 207 - Simulator Configuration Management	0
		TRA-208	Training Procedure 208 - Simulator Training	0
		TRA-295	Training Procedure 205 - Shift Technical Advisor Training	12
		TRI-204.01	Training Instruction 204.01 - Licensed Operator Requalification Training Processes and Program Reviews	0
		TRI-206.02	Training Instruction 206.02 - NRC Requalification Exam Development Process	0
		TRI-206.02	NRC Exam Development Process	0
		TRI-206.04	Training Instruction 206.04 - Licensed Operator Requal Periodic Exams	0
		TRI-208.02	Training Instruction 208.02 - Conduct of LORT Simulator Training	0
71111.15	Corrective Action Documents	CR-YYYY-NNNN	2000-000142, 2019-003684	
	Miscellaneous	59SC-2000-000142-02-02		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71124.01	Corrective Action Documents	IR/TR/CR	2019 - 002448, 002331, 001511, 001117, 001547 2018 - 009060, 009021, 009016, 008400, 00840	
	Corrective Action Documents Resulting from Inspection	IR-2019	003649, 003650, 003681, 003681	
	Miscellaneous	1RF20	Cavity Recovery Action Plan for MSIP	2/1/19
		DIDCP No. !RF20-02	Contingency Plan: Containment Closure & Maintaining Common Area Pressure Boundary	2
		RPI-305-2	LHRA/VHRA Key Log	April - May 2019
	Procedures	RPI-212	Radioactive Source Control	13
		RPI-302	Radiation and Contamination Surveys	1
		RPI-303	Radiological Air Sampling	0
		RPI-304	Radiological Posting and Labeling	3
		RPI-305	Access Controls for High Radiation Areas	3
		RPI-629	Radiological Risk Management	5
		RPI-700	Sealed Source Leak Testing	13
		STA-650	General Health Physics Plan	8
		STA-660	Control of High Radiation Areas	18
	Radiation Surveys	M-20190421-29	1-155D-G 1RF20 Initial Entry Survey	
		M-20190421-35	1-154A/D 1RF20 808' Trash Racks	
		M-20190421-36	1-154A-D 1RF20 Initial Entry Survey	
		M-20190421-9	1 905 1RF20 Initial Entry	
		M-20190423-56	1RF20 (1-155H-K) Post CRUD Burst	
		M-20190430-33	!RF20 Post Decon of Cavity Floor After Reactor Head Set for MSIP 1-157	
	Radiation Work Permits (RWPs)	RWP 2019-1215	Scaffolding in the RCA	
		RWP 2019-1600	WEC Refueling	
		RWP 2019-1604	MSIP Westinghouse	
		RWP-2019-1607	MSIP Support, Cavity Decon	
	Self-Assessments	EVAL 2018-0006	CPNPP Nuclear Oversight: Work Management/RP Audit	7/26/18

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71124.03	Corrective Action Documents	IR/TR/CR	2017-009867, 010605, 010692, 010827, 011717, 011762, 012840, 013033, 2018-000842, 001245, 001285, 001859, 003371, 004052, 005228, 006575, 007249, 008342, 008400 2019-000200, 001117, 001421, 001511, 001547, 001622, 001669, 002036, 002128, 002192, 002448	
	Corrective Action Documents Resulting from Inspection	IR-2019	003680, 003682	
	Procedures	RPI-115	Alarm Response	10
		RPI-303	Radiological Air Sampling	0
		RPI-902	Issue and Control of Respiratory Protection	17
		RPI-923	Maintenance and Use of Portable HEPA Filter Ventilation Units	5
		SAF-104	Inspection of Respiratory Protection Equipment (Maintenance & Repair	12
		SOP-801A	Containment Ventilation	14
		SOP-816	Primary Plant Ventilation Systems	18
		STA-652	Radioactive Material Control	21
		STA-653	Contamination Control Program	20
		STA-802	Control Room Ventilation	13
		STI-211.06	Use of Respiratory Protection	1
	Self-Assessments	EVAL 2018-006	CPNPP Nuclear Oversight: Work Management/RP Audit	7/28/19
71151	Procedures	NGM-710	Management Review Meetings	11/2/18
		RPI-629	Radiological Risk Management	5
71152	Calculations	STI-422.01	Operability Determination and Functionality Assessment Program	23
	Corrective Action Documents	CR-YYYY-NNNN	2018-008521, 2019-000324, 2019-001628, 2019-001830, 2019-001836, 2019-003498, 2019-003672, 2019-005285	
		TR-YYYY-NNNN	2018-005446	
71153		CR-YYYY-NNNN	2019-001949	
	Miscellaneous		Shift Manager Daily Activities Log	